

• What causes an earthquake ?

An earthquake is the **shaking of the surface of the Earth** caused by a **sudden release of energy in the crust**. This great release of energy can be caused by the **movement or breaking of the tectonic plates**.

The plates can move in 3 ways (convergent, divergent or sliding). When they do so, they are next to each other (**a plate is never alone, and always has a plate neighbour**). What happens is that when one plate wants to move, **the other often tries to resist**.

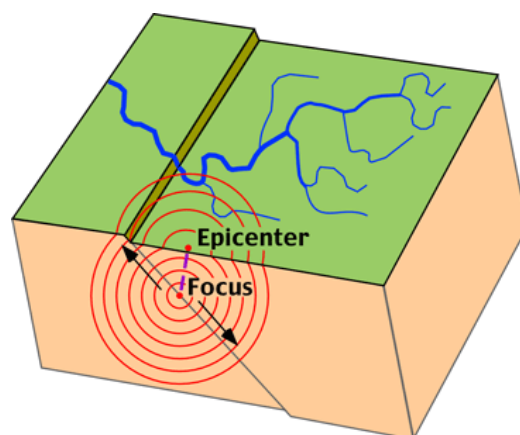
That resistance will lead to **energy accumulation**, energy that can be released if the plate suddenly breaks or if the resistance suddenly stops.

That **energy is released in the form of seismic waves**, that contain all the energy of the earthquake and causes all the damage.

The boundary between 2 plates is called a **fault** : this is where all the tension / resistance will happen.

The place where the energy is released, because of breaking or tension release is called **the focus**, or **hypocenter**. This is where the earthquake begins, and it is located on the fault.

The place on the surface where the earthquake will be the strongest is called **the epicenter**, it is directly above the focus on the surface.



• How to measure it ?

To measure the intensity and magnitude of an earthquake, study it, and try to understand what happened, we can use a device called a **seismograph or seismometer**. It will monitor the movement of the ground, and allow to measure the strength of the earthquake and know the location of the focus.

• Can we predict it ?

It is impossible to predict the time of an earthquake, but **we can almost know where**. We know how earthquakes work : they happen when 2 plates meet and accumulate energy somewhere in the fault. Therefore, if we know where are the tectonic plates and their boundaries, we know the places where earthquakes are more likely to happen.