Tectonic Hazards

1. Tier 3 Vocab

- **Continental crust –** Thicker, less dense crust that makes up the continents.
- **Hotspot –** An area where unusually hot magma rises to the surface and erupts as a volcano.
- **Oceanic crust –** Thinner and more dense crust located under the oceans and formed at a constructive plate boundary.
- **Natural hazard -** A naturally occurring event that is a threat to the population.
- **Plate margin –** The point at which two plates meet.
- **Prediction** – Using monitors and historical patterns to calculate when a hazard may occur
- **Subduction** – A process at destructive plate margins where one plate is forced underneath another one.
- **Tectonic hazard** – A natural hazard that is formed due to physical processes of tectonic plates.
- **Tsunami –** A large wave created by the displacement of water by tectonic hazards.

2. What is the structure of the Earth?

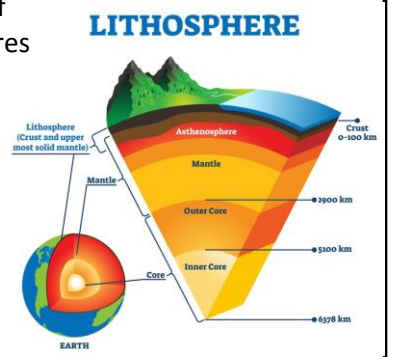
The Earth is composed of distinct sections. The

Lithosphere – The crust and upper most mantle where tectonic plates are located.

Mantle – Almost 3,000km thick, the rock is solid but high temperatures allow it to be ductile and flow.

Outer Core – Outer layer of the core where temperatures are so high it is a liquid.

Inner Core – Extreme pressures cause the centre of the Earth to return to a solid state.



3. What causes the tectonic plates to move?

The crust is divided into tectonic plates which are moving due to convection currents in the mantle.

1 Radioactive decay of some of the elements in the core and mantle generate a lot of heat.

2 When lower parts of the mantle molten rock (Magma) heat up they become **less dense** and **slowly rise**.

3 As they move towards the top they cool down, become **more dense** and **slowly sink**.

4 These **circular movements** of semi-molten rock are **convection currents**

5 Convection currents create **drag** on the base of the tectonic plates and this causes them to move.

4. What are the types of plate margins?

Destructive plate margin

When the denser plate subducts beneath the other, friction causes it to **melt and become molten magma**. The magma forces its ways up to the surface to form a volcano. This margin is also responsible for **devastating earthquakes**.

Constructive plate margin

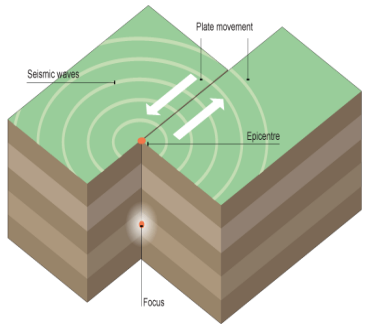
Here two plates are **moving apart** causing new magma to reach the surface through the gap. Volcanoes formed along this crack cause a submarine mountain range such as those in the **Mid Atlantic**

Conservative plate margin

A conservative plate boundary occurs where plates **slide past each other** in opposite directions, or in the same direction but at different speeds. This is responsible for earthquakes such as the ones happening along the San Andreas Fault, USA.

5. What causes earthquakes?

Earthquakes are caused when two plates become **locked** causing **friction** to build up. From this **stress**, the **pressure** will eventually be released, triggering the plates to move into a new position. This movement causes energy in the form of **seismic waves**, to travel from the **focus** towards the **epicentre**. As a result, the crust vibrates triggering an earthquake.



6. Command Words

Assess – Make an informed judgement by using the evidence available.

Compare – Identify both similarities and differences. Clearly state how they are similar or different.

Describe – Set out the key characteristics. (Say **what** is happening).

Explain – Set out purposes and reasons. (Say **why or how** it has happened.

Evaluate – Using the available evidence make a judgement about how effective or positive something is.

Identify – Name or highlight a key characteristic.

Justify – Make a point and support it with evidence.

Outline – Set out the main characteristics, often looking for one key characteristic.

To what extent – Judge the importance or success of a strategy or event. Ensure that you provide a measure of the success.