

Week 1: What is a Hazard?

- Natural hazards are extreme natural events that can cause loss of life, extreme damage to property and disrupt human activities.
- Some natural hazards, such as flooding, can happen anywhere in the world.
- Other natural hazards, such as tornadoes, can only happen in specific area
- Some hazards need climatic or tectonic conditions to occur, for example tropical storms or volcanic eruptions .
- Natural hazards can be placed into two categories - tectonic hazards and climatic hazards.
- Tectonic hazards occur when the Earth's crust moves.
- Climatic hazards occur when a region has certain weather conditions, for example heavy rainfall can lead to flooding.

Week 2: The Earths Structure

- The Earth has four main layers - the inner core, the outer core, the mantle and the crust.
- The inner core is 5,500°C - extremely hot. It is a very dense and solid. It is made from iron and nickel
- The outer core is 2,000 km thick and is a liquid.
- The mantle is semi-molten and about 3,000 km thick.
- The crust is the rocky outer layer. It is thin compared to the other sections, approximately 5 km to 70 km thick
- The crust is made up of pieces called plates
- The oceanic crust is found under the sea and is thinner and more dense than the continental crust.

Week 3: Plate Boundaries

- Destructive plate boundaries occur when oceanic and continental plates move together. The oceanic plate is forced under the lighter continental plate. Friction causes melting of the oceanic plate and may trigger earthquakes. Magma rises up through cracks and erupts onto the surface .
- Constructive plate boundaries occur when plates move apart. Volcanoes are formed as magma wells up to fill the gap, and eventually new crust is formed.
- Conservative plate boundaries occur when plates slide past each other in opposite directions, or in the same direction but at different speeds. Friction is eventually overcome and the plates slip past in a sudden movement. The shockwaves created produce an earthquake.
- Collision zones form when two continental plates collide.

Week 4: Volcanoes

- A volcano is an opening in the Earth's crust that allows magma, hot ash and gases to escape.
- Magma is molten rock - rock that is so hot it has turned into liquid. When magma reaches the surface of the Earth it is called lava and comes out of the volcano as a volcanic eruption, along with gases and ash .
- Most volcanic eruptions are caused by tectonic plates moving towards each other, which usually produces violent eruptions.
- 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 gas that can be carried in the air for many kilometres
 - volcanic bombs - large bits of very hot rock blown out of a volcano
- Volcanoes can, however, help people living near them earn money by bringing in tourists to the area, improving the soil and providing geothermal energy .

Week 5: Earthquakes

- Large earthquakes are usually connected with plate boundaries.
- Seismometers record earth movements.
- An earthquake is a sudden shockwave caused by rocks being under stress from the movements of plates at plate boundaries.
- Stress in the rock builds up enough to deform and reach breaking point. At that point, the stored up energy is released in the form of shockwaves
- In the past, the Richter scale was used to measure the power of earthquakes.
- The earthquake's epicentre is the place on the earth surface above the focus of an earthquake
- Immediate effects can include falling buildings and loss of life
- Secondary effects can include loss of business and homes

Week 6: Prediction, Planning and Protection

- Prediction involves using seismometers to monitor earth tremors
- Experts know where earthquakes are likely to happen.
- It is very difficult to predict when they will happen.
- Protection involves constructing buildings so that they are safe to live in and will not collapse
- In earthquake-prone countries, hospitals, emergency services and residents practise for an earthquake
- Low Income Countries (LIC) find it difficult to plan, predict and prepare as they do not have enough money to pay for the equipment, building materials and resources.
- LIC countries often have higher death rates because they are limited in their preparations and responses to hazards.