

CAIE Geography Pre-U

3A: Tectonic Hazards Glossary of Definitions



Glossary of Definitions - 3A Tectonic Hazards

Accretion Wedge - The accumulation of material at the point of subduction.

Aseismic Buildings - Buildings designed to withstand or minimise destruction during an earthquake.

Asthenosphere - The upper mantle layer of the Earth. It is semi-molten and approximately 2000km wide.

Ash - Fine particles and dust ejected during an eruption, which can remain airborne as clouds or accumulate on the ground.

Constructive plate margin- Where two plates are moving away from each other.

Continental Crust - Crust that forms the continents of the lithosphere, on average 35km thick.

Continental Drift - The movement of tectonic plates, due to varying weights of crust. It was originally thought that convection currents caused the movement of the plates, but now Slab Pull is thought of as the primary driving force.

Conservative plate margin- Where two plates are moving in opposite direction but parallel to each other or in slightly different directions.

Convection Currents - The circulation of magma within the mantle (asthenosphere). Magma is heated by radioactive processes in the core and cools at the surface, and so circulates between the two places.

Destructive plate margin- Where a denser oceanic crust is subducted under a lighter continental crust.

Epicentre – The point on the surface, directly above the earthquake's origin.

Focus – The place in the crust where the pressure/seismic energy is released.

Hawaiian eruption- Fluid basaltic lava is thrown into the air in jets from a vent.

Hazard Mitigation Cycle - The sequence of governance of a natural hazard: monitoring & prediction, mitigation, preparedness.

Hot Spot - Volcanoes found away from the plate boundary, due to a magma plume closer to the surface.

Jokulhaup - A sudden glacial flood caused by a glacier on top of or near a volcano melting due to the heat from the eruption.



Lahar - A flow of mud and debris.

Lithosphere - The upper crust of the Earth (average thickness = 100km).

Love Waves - A surface earthquake wave with horizontal displacement.

Mid-Ocean Ridge - Parting oceanic plates at a constructive plate boundary creates a ridge, with new land at the base of the oceanic valley.

Moment Magnitude Scale - A measure of an earthquake's energy released, considered the most accurate measure.

Oceanic Crust - Crust, usually thinner than continental crust, that forms the sea floor. It is on average 7km thick.

Paleomagnetism - The alternating polarisation of new land created. As magma cools, the magnetic elements within will align with the Earth's magnetic field, which can alternate over thousands of years.

Park's Model - A model describing the decline and recovery of a country over time, following a natural disaster.

Partial Melting - Elements within the lithosphere have different melting points, and so rock is partially melted, partially solid.

Plinian eruption - Largest and most violent where columns of gas and ash rise high in the sky.

Primary Waves - An earthquake wave causing compressions within the body of rock.

Pyroclastic Flow - A mixture of gases and rock fragments, at high temperatures travelling at rapid speeds.

Rayleigh Waves - A surface earthquake wave causing both horizontal and vertical displacement.

Richter Scale - A logarithmic measure of earthquake's intensity.

Ridge push - The movement of plates away from each other due to new magma rising up at a mid-ocean ridge.

Secondary Waves - An earthquake wave causing vertical displacement within the body of rock.

Seismic Waves - The energy released during an earthquake, in the form of Primary, Secondary, Love and Rayleigh Waves.

Slab Pull - The force contributing to the movement of tectonic plates. Slab Pull is due to the weight of the plate.



Strombolian eruption- Distinct bursts of fluid lava from a magma-filled summit conduit.

Subduction - Oceanic plate is forced below continental plate, due to the oceanic plate being more dense than the continental plate.

Supervolcanoes- Deposit material of a volume greater than 1,000 cubic kilometres.

Surtseyan eruption- Where magma interacts explosively with water.

Tsunami - Initial vertical water displacement (often from a submarine earthquake) creates waves, with large destructive power.

Volcanic Explosivity Index (VEI) - A measure of the magnitude of a volcano's eruptions.

Volcanic Island Arc - A series of volcanoes (often in the shape of an arc) that are formed consecutively, as a tectonic plate moves across a magma plume.

Vulcanian eruption- Short, violent, relatively small explosion of viscous magma.

Wadati-Benioff Zone - A region of the subducting plate, most affected by pressure and friction, where most destructive margin earthquakes originate.

