Friday 20th May 2022

Geography Revision – Physical Geography

Tectonic Hazards

Distribution of Earthquakes and Volcanoes

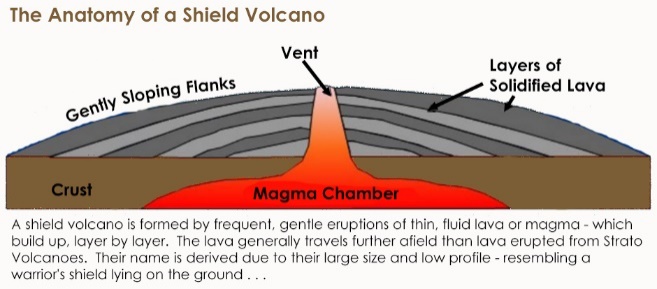
* Surrounding plate boundaries
* Hotspots that occur in the centre of plates
* Mountainous regions where landforms that have been formed by volcanoes and earthquakes.

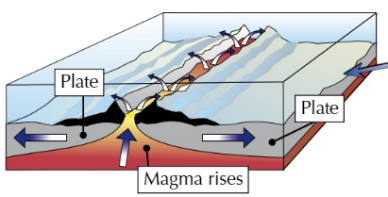
Plate BoundariesDiagram

Description automatically generated

Constructive (for example Iceland):

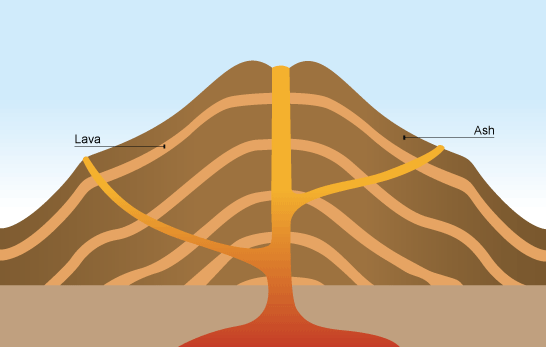
* Formed by two plates moving away from each other.
* Earthquakes.
* Shield Volcanoes (caused by fast-moving magma) formed at cracks in the continental crust.



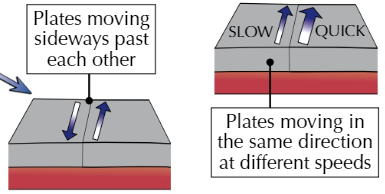


Destructive (for example Chile):

* Formed by two plates moving towards each other, the denser oceanic plate subducts (moves below) the other plate.
* Earthquakes
* Mountain Ranges
* Composite Volcanoes formed at a gap between the plates.



Conservative (for example California/San Andreas Fault):



* Formed by two plates moving against each other or moving the same direction.
* Earthquakes

Hotspots:

* Hot areas in the centre of plates.
* Whilst not technically plate margins, volcanoes can still form here.

Earthquakes

* Earthquakes occur at destructive, constructive, and conservative plate margins.
* As the plates try move past each other, they are caught, and tension builds up.
* The pressure builds up due to the friction between them, until suddenly they give way.
* The tectonic plates snap past each other, causing the ground to shake.

Focus – The centre of the earthquake.

Epicentre – The point above the focus on the Earth’s surface.

Prediction of Volcanoes

Seismograms – Measure vibrations in the Earth’s crust and measures the magnitude of earthquakes.

Tiltmeters – Detects change in angle of terrain which is caused by shifting magma below the surface.

Satellite Imagery – Satellites can be used to detect tiny movements over a large area.

Time-Lapse Cameras – Allow geologists to make observations from a safe distance.

Richter Scale

* Measures the magnitude of a tremor using a seismograph.
* Logarithmic scale – 5 is 10x more powerful than 6 (x10 increase moving up the scale)

Responses to Earthquakes

Immediate Responses:

* Needed to prevent any further damage or deaths.
* Rescue Operations
* Temporary Housing
* Temporary Infrastructure
* Aid from other countries/charities
* Evacuations/warnings

Long-Term Responses:

* Rebuild buildings and infrastructure
* Improve Preparation
* Improve the Local Economy

Weather Hazards

Winds and Pressures

* Wind is the movement of air on a large scale.
* Caused by differences in pressure.
* Different temperatures cause movement.
* Wind moves from high to low pressure areas of the Earth.

Global Atmospheric Circulation

* Cool sinking air forms high pressure belts.
* Hot rising air forms low pressure belts.
* There are three atmospheric circulation cells in each hemisphere:
  + Hadley Cell – 30° North/South of the Equator
  + Ferrel Cell – 60° North/South of the Equator
  + Polar Cell – At the poles

Diagram

Description automatically generated

* Trade Winds – winds that blow from 30° N/S towards the Equator
* Westerlies – winds that blow from 30° N/S towards the poles

Tropical Storms

Tropical Storms – An intense low-pressure weather system that normally forms above tropical oceans and have extreme rain and winds.

* The storms form over water that is 26.5°C or higher
* Energy is released when air evaporates, rises, or cools
* This energy increases the strength of a storm
* They become weaker as they move further away from warm water

The Coriolis Effect

* The rotation of the Earth causes winds to be deflected.
* This means that tropical storms move East to West
* It also means that they rotate **anti-clockwise** in the **Northern Hemisphere** and **clockwise** in the **Southern Hemisphere**

Structure of Tropical Storms