

- Asthenosphere: Earth's mantle, relatively pliable + below rigid lithosphere

Plate Tectonics:

- Alfred Wegener proposed in 1915 that continents slowly wandered the globe
- Evidence found during the mid 20th century that supported continental drift:
 - Seafloor topography
 - Age of seafloor
 - Distributions of heat flow, volcanoes & earthquakes
 - Paleomagnetism
- Gave rise to theory of plate tectonics – generate minerals resources
 - Divergent
 - Called constructive because new crust is being made
 - Two plates are moving apart. Magma rises to surface + fills gap between the plates. When the magma cools, it forms new crust.
 - In oceans, mid-ocean ridges
 - Convergent – crust is recycled
 - Ocean – Oceanic OR Oceanic – Continental
 - Destructive boundaries, crust is destroyed when it sinks down into mantle
 - Two plates move toward each other. Crust that is more dense will be subducted (drawn under) the plate that is less dense. Oceanic crust always sink under continental crust
 - Volcanoes form at spot where plate that is subducted melts. Volcanoes form at edge of continent (oceanic - continental) OR as a chain in ocean (oceanic - oceanic)
 - OO: The Marianas Trench formed when the Pacific Plate subducted beneath the Philippine Plate
 - OC: Andes Mountains in South America where the Nazca Plate subducts under the South American Plate
 - Continental – Continental
 - Collision boundaries, two plates crash into each other
 - Two continental plates move toward each other, crust between them piles up instead of sinking.
 - High, "folded" mountains form from rock and seabed that is squeezed between the two plates.
 - CC: The Himalayas: Formed by the collision of the India Plate with the Eurasian Plate
 - Transform
 - Conservative boundary, crust is not made or destroyed
 - Plates slide by each other, side-by-side
 - Earthquakes happen when plates get stuck, then break free
 - NO VOLCANOES
 - The Alpine fault in New Zealand

How Does Earth Recycle & Renew Its Surface?

- Plate tectonics → rock cycle: process by which Earth recycles + renews surface