



## Interior of the Earth

# INTERIOR OF THE EARTH

## 1 THE CRUST

- Thin, outermost layer
- Oceanic crust – thinner
  - Mean thickness - 5 km
  - Made up of Silica and Magnesium (SiMa)
- Continental crust – thicker
  - Mean thickness - 30 km
  - Made up of Silica and Aluminum (SiAl)
  - Thicker in the areas of major mountain systems.
    - Around 70 km thick in the Himalayan region.
- Temperature increases with depth (rises by up to 30° C for every km)

### Lithosphere

- Rigid outer layer, thickness: 100 km
- Consists of the crust and the upper mantle
- Divided into tectonic plates responsible for large-scale changes in the earth's geological structure (folding, faulting)

## 3 THE CORE

- Lies between 2900-6370 km below the earth's surface
- Made up of heavy materials, primarily nickel (Ni) and iron (Fe) - NiFe
- Outer core –
  - Between 2900-5100 kms
  - Liquid because of not enough pressure to solidify
- Inner core –
  - Between 5100-6370 kms
  - Solid – it can transmit secondary waves (earthquake) which outer core can't
- Denser than Mantle

### Boundaries/discontinuities between Earth's layers

- Conorod Discontinuity – between upper and lower crust
- Mohorovicic Discontinuity (Moho) – separates the crust from the mantle, its average depth being about 35 km.
- Repiti Discontinuity – between the upper and lower mantle
- Gutenberg Discontinuity – lies between the mantle and the outer core.
- Lehman Discontinuity- between inner and outer core

## 2 THE MANTLE

- Extends from Moho's discontinuity to a depth of 2,900 km
- Upper portion is called **asthenosphere**
  - Zone of weak rocks; in semi molten or jelly like state
  - Extends upto 400 kms
  - Main source of magma that comes out of volcanic eruptions



