

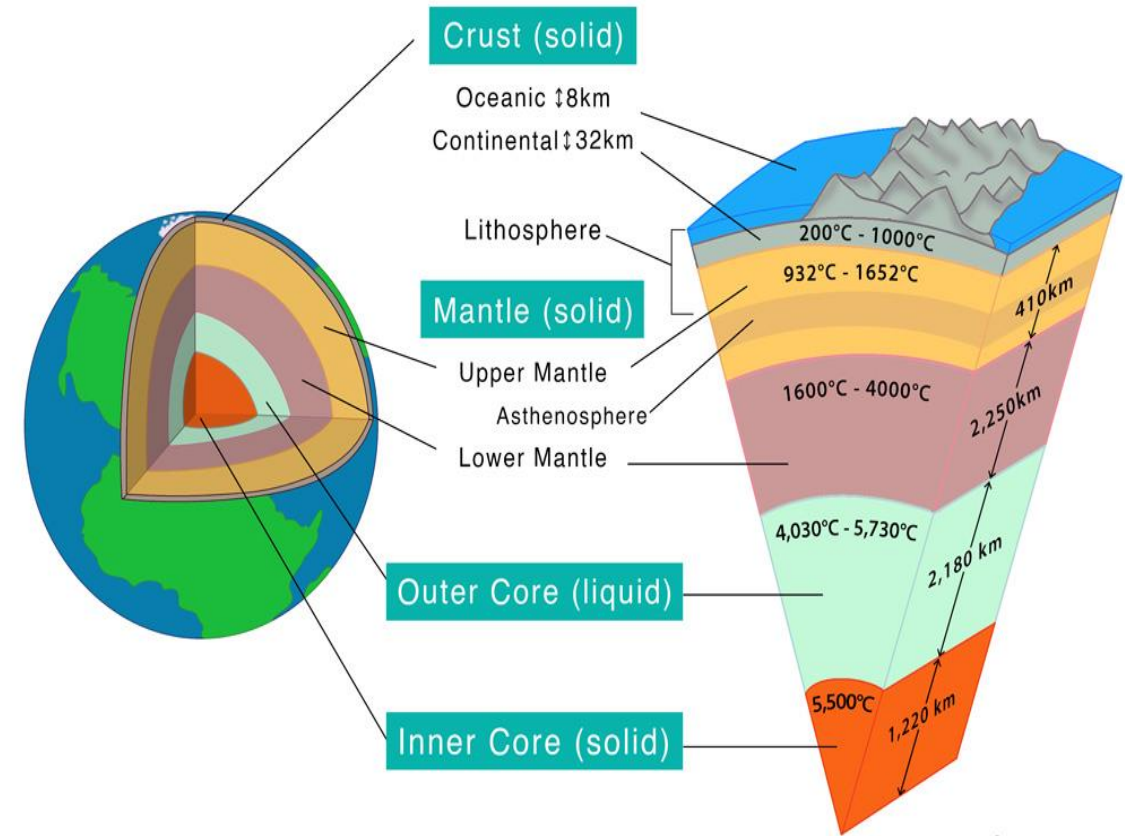
EARTH

- Most colorful and the densest planet (Support Life)
 - Biggest of all the terrestrial planets
-
- At 3rd position
 - 5th largest in solar system
 - Diameter: 12756km (7926miles) – **13000km or 8000miles**
 - Circumference: 40075km (24901miles)
 - About 30% of earth's surface is covered with land, 70% oceans
 - One moon called Luna
 - Earth's atmosphere: Nitrogen, Oxygen and Rare gases
 - One revolution (365days) and One Rotation (23hrs, 56mins and 4 sec)
 - Density: 5.52g/cm³

Earth's Structure and Composition

Lithosphere, asthenosphere, mesosphere, crust, mantle, core (outer core and inner core)

Layers of the Earth

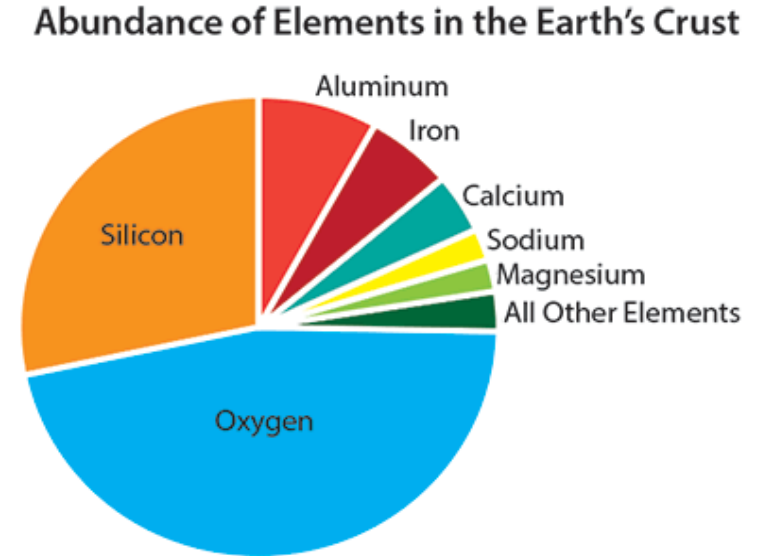


1. Earth's Crust:

- Outer most layer
- Contains the continents and ocean basins
- Thickness: 40-70km, in the continents and 5-10km in the ocean basins
- Composed of Oxygen(46.6%), Silicon(27.7%), Aluminum(8.1%) and Iron(5%)
- Temperature within the deepest part: 870° C (melt rocks)
- Density: 2.8g/cm³
- 4/3 part is covered with water

Moho: Boundary between the crust and the mantle

Lithosphere: Crust + Solid portion of the upper mantle



2. Mantle:

Composed of Ferro-
magnesium-silicate

2900km deep

Asthenosphere

Transition Zone(400-
670km)

A. Upper mantle

400km from Moho to depth

B. Lower mantle

Below 670km

Does not change much in composition

Denser due to increase in pressure

3. Core

Last Layer

Thickness: 3500km

Mesosphere

A. Outer Core

Thickness: 2300km

Liquid

Composed of Nickel-Iron alloy (Control earth's magnetic field (B))

B. Inner Core

Thickness: 1200km

Solid due to extremely high pressure

Lithosphere:

The outermost and most rigid mechanical layer of the Earth. The lithosphere includes the crust and the top of the mantle. The average thickness is ~70km, but ranges widely: It can be very thin, only a few km thick under oceanic crust or mid-ocean ridges, or very thick, 150+ km under continental crust, particularly mountain belts.

Depth: (0-100 km)

Asthenosphere:

The asthenosphere is underneath the lithosphere. It is about 100km thick, and is a region of the mantle that flows relatively easily. Reminder: it is not liquid.

Depth: (100-350 km Soft plastic ***note:** The mantle is not liquid)

Mesosphere:

The mesosphere is beneath the asthenosphere. It encompasses the lower mantle, where material still flows but at a much slower rate than the asthenosphere.

Depth: (350-2900km stiff plastic)