

Earth's Layers

Layers by Composition

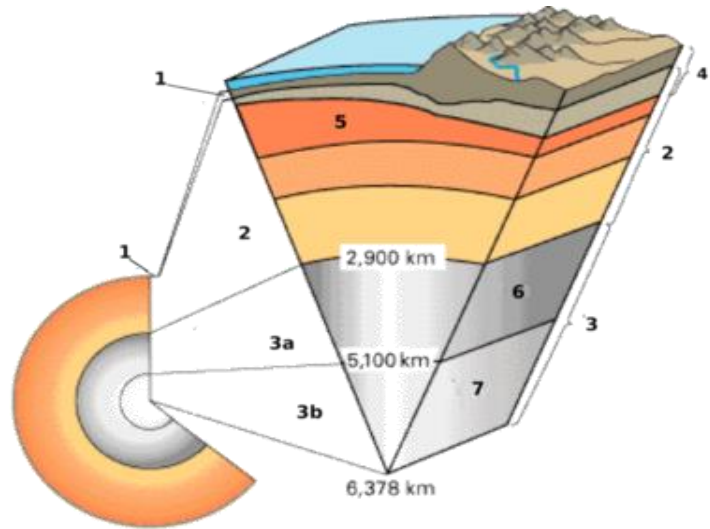
- The **crust** is less than 1% of Earth by mass. The two types are oceanic crust and continental crust.
- The **mantle** is hot, ultramafic (filled with magnesium and iron) rock. It represents about 68% of Earth's mass.
- The **core** is mostly iron metal. The core makes up about 31% of the Earth.

Study Tip

Just like the spherical layers in an onion, the Earth has multiple layers that serve different purposes.

Layers by Mechanical Properties

- The **lithosphere** is composed of both the crust and the portion of the upper mantle and behaves as a brittle, rigid solid.
- The **asthenosphere** is partially molten upper mantle material and behaves plastically and can flow.



A cross section of Earth showing the following layers: (1) crust (2) mantle (3a) outer core (3b) inner core (4) lithosphere (5) asthenosphere (6) outer core (7) inner core.

Concept Check

- How can the Earth be divided into layers by composition?
- How can the Earth be divided into layers by mechanical properties?