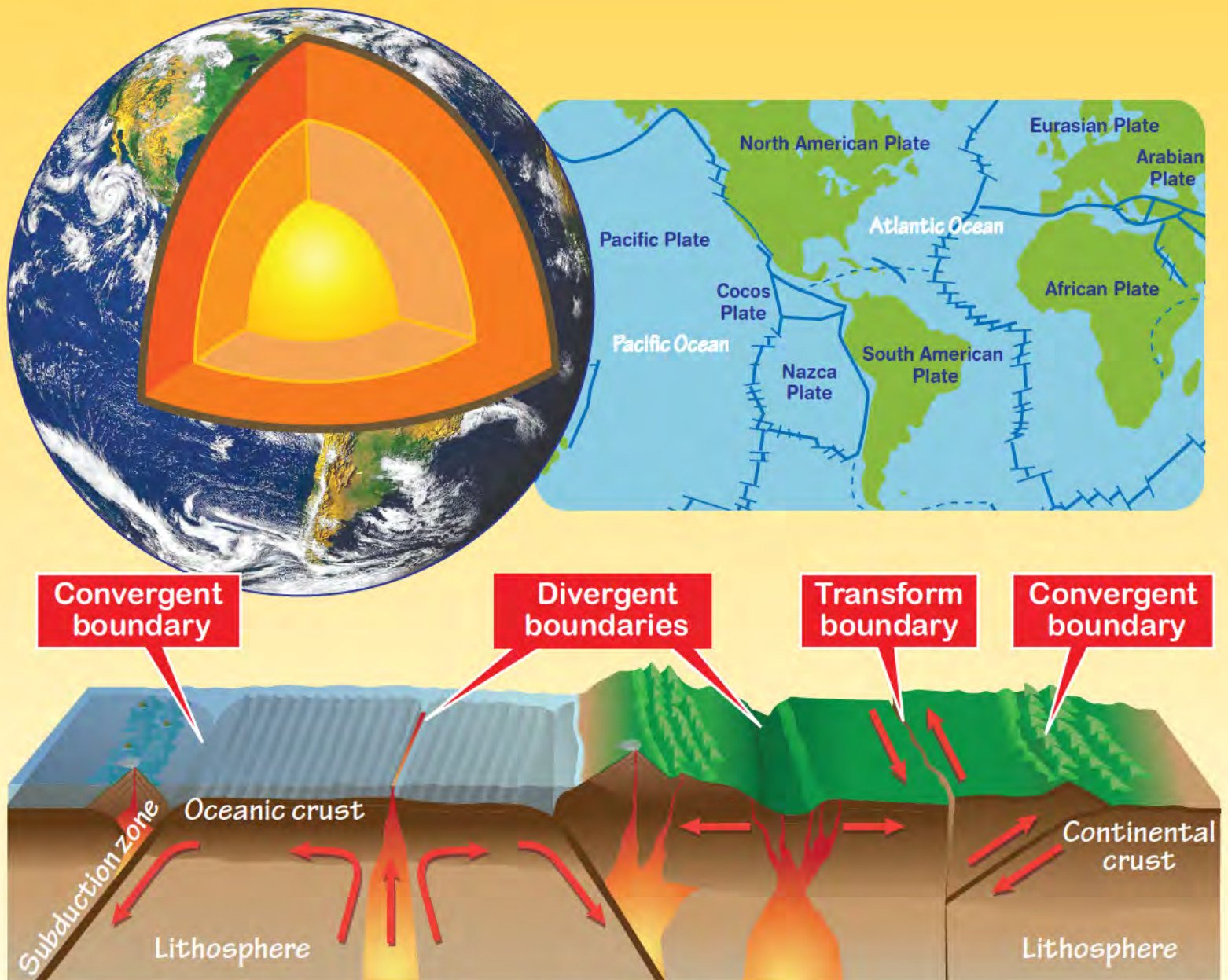


Plate Tectonics Learning Guide



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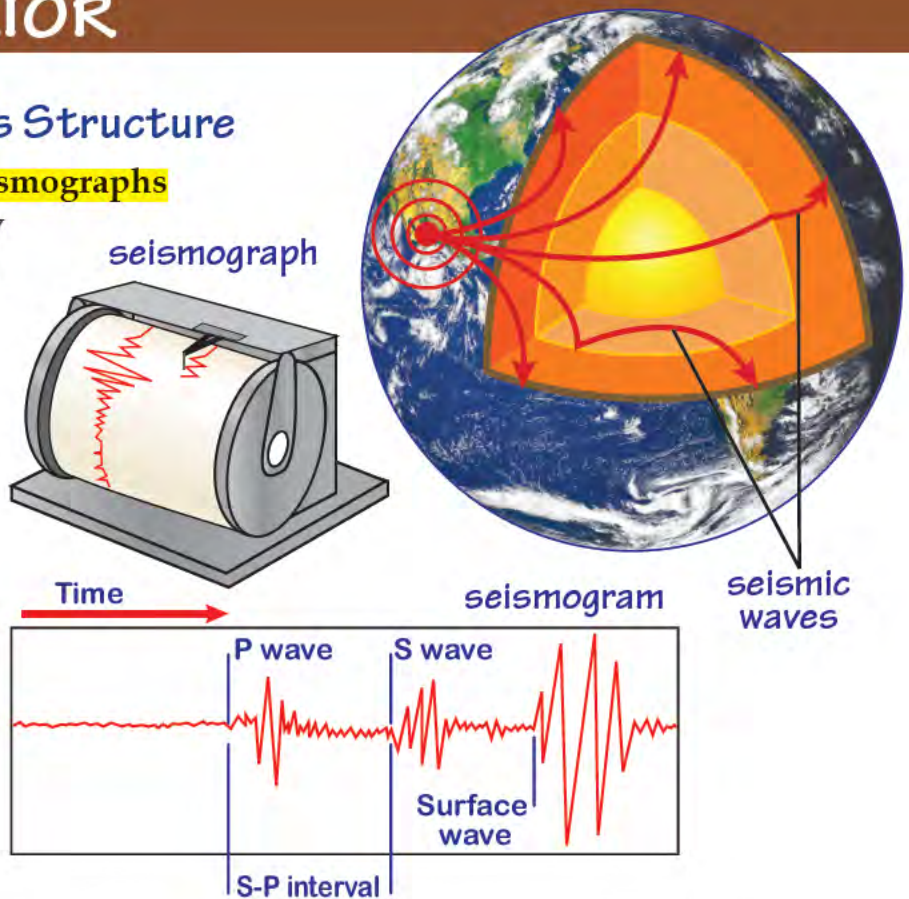
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EARTH'S INTERIOR

Seismograms and Earth's Structure

Scientists use machines called **seismographs** to study **seismic waves** caused by earthquakes. Data gathered from **seismograms** has provided a relatively detailed picture of Earth's interior structure.

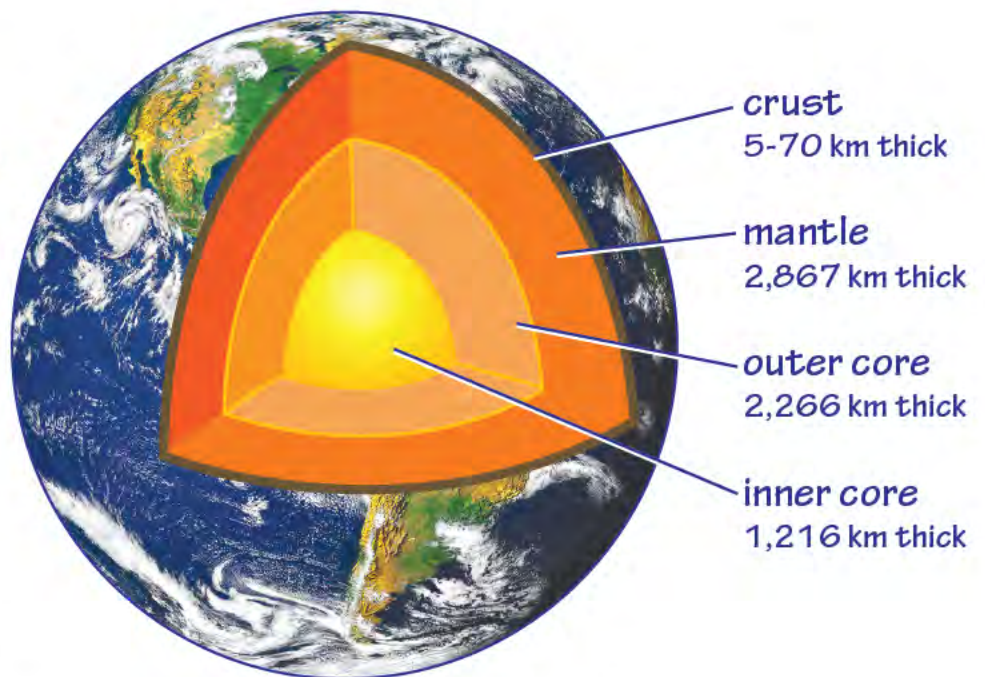


Layers of the Earth

The Earth is composed of three main layers—the **crust**, **mantle** and **core**. These layers vary in composition, size, temperature and pressure.

The Earth's Crust

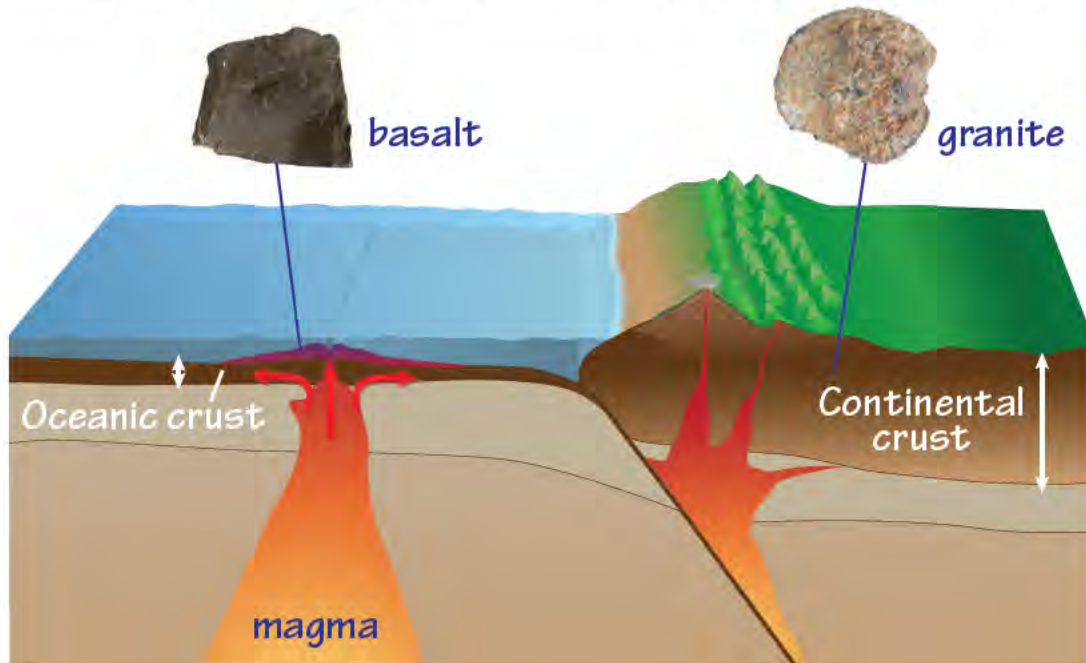
The **crust** is the **outermost layer** of the Earth and is 5 to 70 kilometers thick. There are two different types of crust—**oceanic** and **continental**.



The Earth's Core

The **core** is the **densest layer** of the Earth and is composed of **nickel** and **iron**. It is divided into a **liquid outer core** and a **solid inner core**.

Oceanic crust is primarily composed of **basalt** that forms when **magma** pours out from the mantle onto the ocean floor. Oceanic crust is **denser**, but also **thinner** than continental crust.



Continental crust forms the landmasses called continents. This crust layer is composed of rocks such as granite. It is less dense, but thicker than oceanic crust.

The Earth's Mantle

The **mantle** is found below the crust and is approximately **3,000 kilometers thick**. The mantle is made of **solid, hot rock**. The uppermost layer of the mantle and the crust make up what is known as the **lithosphere**.

The **asthenosphere** is found below the lithosphere and is called the **upper mantle**. It is made up of **hotter, weaker rock**. The **lower mantle** called the **mesosphere** is a thick layer of **strong, solid rock**.

