

Q:- Who first proposed the idea of plate tectonics?

Or

Who gave plate tectonic theory?

Ans:- Alfred Wegener

And yet, the theory of plate tectonics represents a fairly young science. The "Father of Plate Tectonics", **Alfred Wegener** proposed "Continental Drift" in 1912, but was ridiculed by fellow scientists. It would take another 50 years for the concept to be accepted.

Q:- What is the cause of plate tectonics?

Ans:- Although this has yet to be proven with certainty, most geologists and geophysicists agree that plate movement is caused by the convection (that is, heat transfer resulting from the movement of a heated fluid) of magma in Earth's interior. The heat source is thought to be the decay of radioactive elements. How this convection propels the plates is poorly understood. Some geologists argue that upwelling **magma** at spreading centres pushes the plates, whereas others argue that the weight of a portion of a subducting plate (one that is forced beneath another) may pull the rest of the plate along.

Q:- Why are there tectonic plates form ?

Ans:- Earth's hard surface (the **lithosphere**) can be thought of as a skin that rests and slides upon a semi-molten layer of rock called the **asthenosphere**. The skin has been broken into many different plates because of differences in the density of the rock and differences in subsurface heating between one region and the next

Q:- What are the 3 Plate boundaries according to plate tectonics theory?

Ans:- Three-dimensional diagram showing crustal generation and destruction according to the theory of plate tectonics; included are the three kinds of **plate boundaries**—divergent, convergent (or collision), and strike-slip (or transform).

Q:- What are the two tectonic plates called?

Ans:- There are **two** main types of **tectonic plates**: **oceanic** and **continental**.

Understanding Plate Tectonic Theory

TECTONIC PLATES

Tectonic plates, large slabs of rock that divide Earth's crust, move constantly to reshape the Earth's landscape. The system of ideas behind plate tectonics theory suggests that Earth's outer shell (lithosphere) is divided into several plates that glide over the Earth's rocky inner layer above the soft core (mantle). The plates act like a hard and rigid shell compared to Earth's mantle. The mantle sits between Earth's dense, very hot core and its thin outer layer, the crust.

Plate tectonics has become the unifying theory of geology. It explains the earth's surface movement, current and past, which has created the tallest mountain ranges and the deepest oceans.

Some scientists think that the shifting plates, which have the ability to help adjust our planet's temperature over billions of years, are a vital element for life.

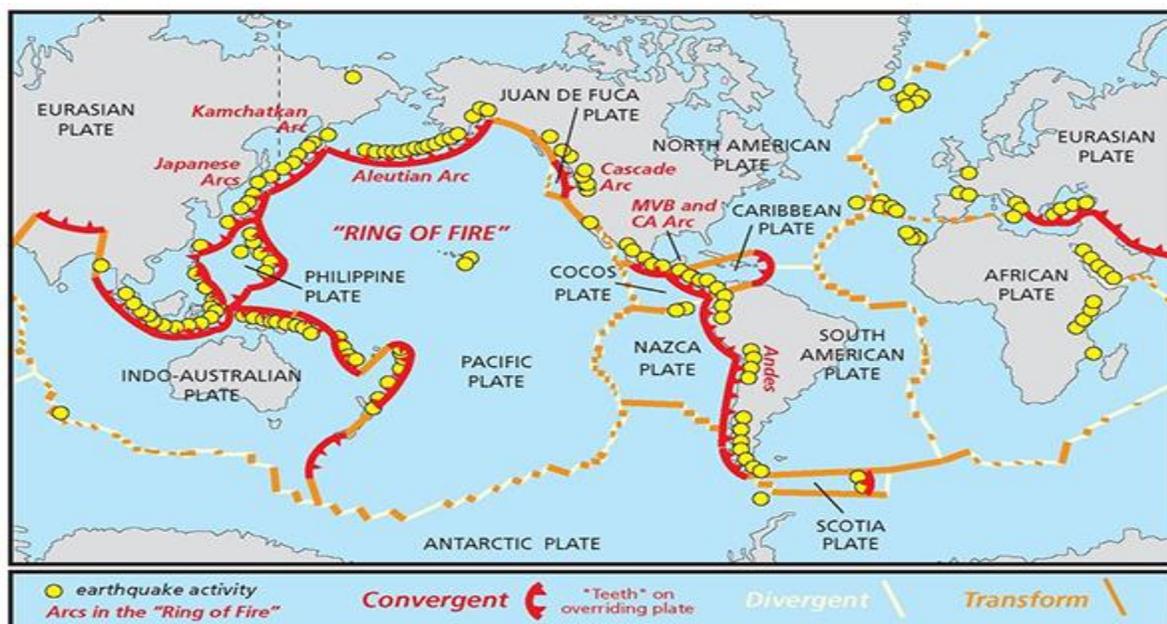
WHAT ARE TECTONIC PLATES?

Tectonic plates are gigantic pieces of the Earth's crust and uppermost mantle. They are made up of oceanic crust and continental crust. Earthquakes occur around mid-ocean ridges and the large faults which mark the edges of the plates.

The World Atlas names seven major plates: African, Antarctic, Eurasian, Indo-Australian, North American, Pacific and South American.

California is located at the seam of the Pacific Plate, which is the world's largest plate at 39,768,522 square miles, and the Northern American plate.

TECTONIC PLATES MAP SHOWING THE RING OF FIRE



Source: National Parks Service (Public Domain)

The Earth is always on the move due to the motion of the tectonic plates. Seven of the major plates make up most of the seven continents and the Pacific Ocean. They are named after nearby landmasses, oceans, or regions.

What is the Ring of Fire?

The Ring of Fire is in the Pacific Ocean. It is made up of a string of volcanoes, deep ocean trenches, and high mountain ranges. It is the site of earthquakes around the edges of the Pacific Ocean.

The tectonic plates map of the Earth shows where mountain building, volcanoes, and earthquakes have occurred.

HOW MANY TECTONIC PLATES ARE THERE?

There are major, minor and micro tectonic plates. There are seven major plates: African, Antarctic, Eurasian, Indo-Australian, North American, Pacific and South American.

The Hawaiian Islands were created by the Pacific Plate, which is the world's largest plate at 39,768,522 square miles.

WHAT IS A TECTONIC PLATE BOUNDARY?

A tectonic plate boundary is the border between two plates. The tectonic plates slowly and constantly move but in many different directions. Some are moving toward each other, some are moving apart, and some are grinding past each other. Tectonic plate boundaries are grouped into three main types based on the different movements.

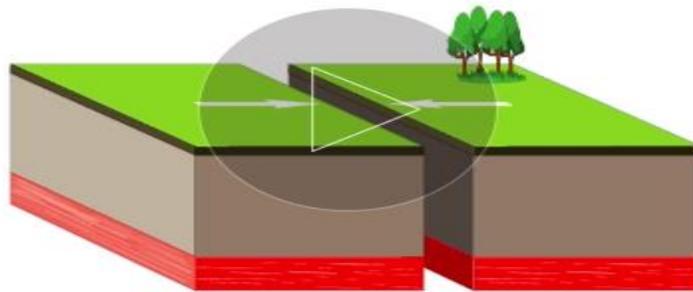
TYPES OF PLATE BOUNDARIES

The study of plate boundaries and their motion is like figuring out a constantly moving [jigsaw puzzle](#). Understanding the types of plate boundaries is vital to understanding the Earth's history. Subduction zones, or convergent margins, are one of the three types of plate boundaries.

The others are divergent and transform margins.

Subduction Zone

Convergent Boundary

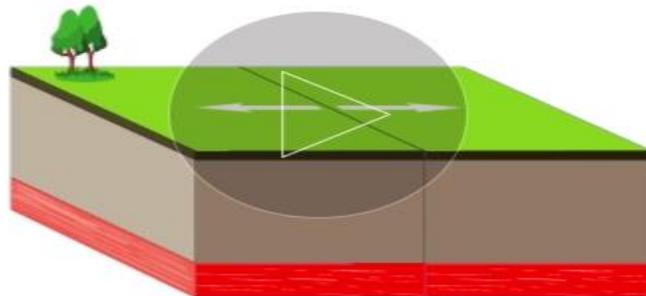


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At subduction zones, a convergent boundary occurs when two tectonic plates push together. When an ocean plate and a continental plate collide, the ocean plate slides under the continental plate, and bends downward.

Divergent Margin

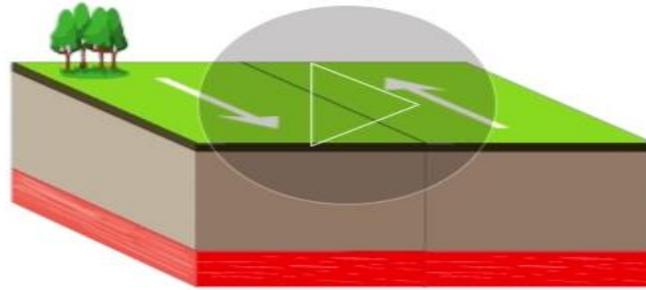
Divergent Boundary



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A divergent margin occurs when two plates are spreading apart, as at seafloor ridges or continental rift zones such as the East Africa Rift. Molten rock rises from the Earth's center to fill the gap.

Transform Boundary



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Transform margins mark slip-sliding plates, such as California's San Andreas fault. The [San Andreas fault](#) marks the location where the North America and Pacific plates grind past each other in a horizontal motion.

The plates do not slide smoothly, but build tension and release it in the form of an earthquake.

HOW DO TECTONIC PLATES CREATE EARTHQUAKES, VOLCANOES & MOUNTAINS?

The Earth's surface is active according to tectonic theory, moving as much as 1-2 inches a year. The many tectonic plates shift and interact all the time. This motion reshapes the Earth's outer layer. Earthquakes, volcanoes and mountains are the result of this process.

Also at work are the roles of convection and gravity:

- Scientists have discovered that the continents have come together and spread apart at least three times in the Earth's history. Geologists believe this motion is driven by convection in Earth's mantle which causes hot rock to rise and cooler rock to sink.
- When the denser tectonic plate dives beneath another plate it is due to the high energy by the Earth's gravity that pushes into the mantle. Earth's tides, which are caused by a gravitational tug of the Moon and the Sun, also put extra strain on geological faults.