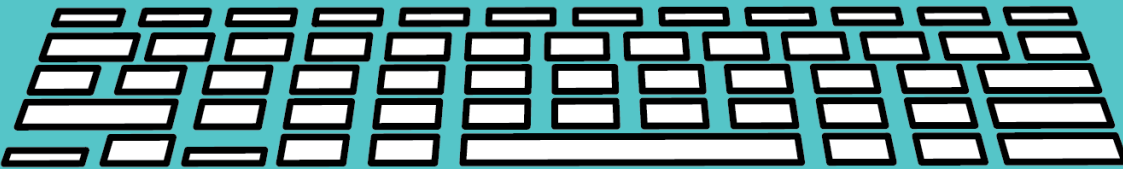


| Short Answer | Type Answer Here |
|---|------------------|
| 1. How many major tectonic plates are there? | |
| 2. What was the supercontinent called? | |
| 3. What do scientists use today to track the plates? | |
| 4. Which plate is not named for the matching continent? | |
| 5. In which state is the San Andreas Fault? | |
| 6. What letters are used for Silicon? | |
| 7. About how many miles thick are tectonic plates? | |
| 8. How many minor tectonic plates are there? | |



| Short Answer | Type Answer Here | Fill in the Blank | Type Answer Here |
|---|------------------|--|------------------|
| 1. How many major tectonic plates are there? | | 9. Land on earth can move up to ___ inches per year. | |
| 2. What was the supercontinent called? | | 10. Underneath the rock layer is the upper ___. | |
| 3. What do scientists use today to track the plates? | | 11. The Mariana Trench is an example of a ___ boundary. | |
| 4. Which plate is not named for the matching continent? | | 12. ___ are part of the oceanic crust. | |
| 5. In which state is the San Andreas Fault? | | 13. ___ boundaries where plates drift ___. | |
| 6. What letters are used for Silicon? | | 14. The Earth revolves around ___. | |
| 7. About how many miles thick are tectonic plates? | | 15. The edges of the tectonic plates are called plate ___. | |
| 8. How many minor tectonic plates are there? | | 16. The smallest tectonic plate is the ___ de Fuca Plate. | |

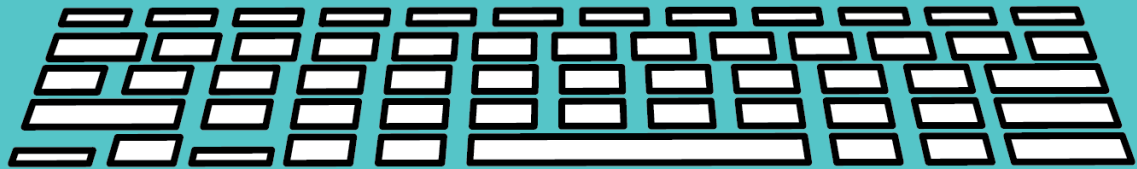


PLATE TECTONICS

Did you know that the ground on earth moves? Just like the earth revolves around the sun, the land is constantly moving. It moves very slowly, but it can move up to 10 centimeters each year.

Imagine the earth with a hot and gooey filling. The earth is similar to a chocolate chip cookie. The filling is the hot and partially melted rock called the mantle. The mantle constantly moves due to uneven heating, called convection currents. In other words, the lithosphere is the top layer of the earth and part of the upper mantle. The lithosphere is constantly moving in slow motion.

The lithosphere is divided into seven major tectonic plates:

- African plate
- Antarctic plate
- Eurasian plate
- Indo-Australian plate
- North American plate
- Pacific plate
- South American plate

The names of these major plates identify the area where they are located. For instance, some of these plates cover an entire continent. Six of the major plates are named for the matching continent. The Pacific plate is the largest. This mostly underwater plate is under the Pacific Ocean, spanning over 100 million square kilometers.

In addition to the seven major tectonic plates, there are eight minor tectonic plates, too. The minor plates include Arabian, Caribbean, Nazca, and Scotia plates. The smallest tectonic plate is the Juan de Fuca Plate.

Geologists think that the tectonic plates were once a giant supercontinent that split apart. For example, Pangaea was the supercontinent from 270 million years ago. This theory that the earth's crust is broken into plates is called plate tectonics. If you look at each plate, they fit together like a puzzle. With the constant shifting of the plates, scientists think that the plates will drift together again - in about 200 million years.

Earth's land and water sit on top of the tectonic plates. The plates are made from solid rock. Underneath the rock layer is the upper mantle, which is partially melted rock. Tectonic plates constantly shift over the weaker partially melted layer.

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Tectonic plates are approximately 62 miles thick. There are two styles of tectonic plates, oceanic and continental.

- Oceanic plates are part of the oceanic crust. These plates have "sima," which is silicon and magnesium. The letters of silicon (si) and magnesium (ma) make up the word "sima."
- Continental plates are part of the continental crust. These plates have "sial," which is silicon (si) and aluminum (al).

The edges of the tectonic plates are called plate boundaries. There are three kinds of boundaries: convergent, divergent, and transform. The action between tectonic plates causes a chain reaction.

- Convergent boundaries are where two plates converge, (push together). As this happens, one plate shifts under another, which is called subduction. This motion can create mountains and volcanoes. It can also cause earthquakes. The Mariana Trench between the Pacific and Mariana Plate is a famous convergent boundary. Here, the Pacific plate subducts under the Mariana plate. Another famous example of a convergent boundary is the Himalayan Mountains. The Indian and Australian plates formed these mountains.

- Divergent boundaries are when two plates diverge (drift apart).

Mid-ocean ridges (crack or split) happens on land. From there, magma

comes through the crack, cools and hardens, creating new land.

- Transform boundaries are when two plates slide past each other. As

this happens, friction is created, which can develop into an earthquake.

The San Andreas Fault is a famous transform boundary that has

caused many earthquakes in California. It lies between the North

American and Pacific plates.

It is called the San Andreas Fault because of the earthquakes and volcanoes.

It is called the Pacific Rim.

The study of tectonic plates over millions of years is called continental

drift. During the 1900s, scientists studied the pattern of the ocean floor with sonar.

They thought they might be a flat and smooth with the help of the

pool. However, under the water, they saw deep valleys, trenches,

and volcanoes. Beautiful landscape like these deep valleys, trenches,

and valleys is the result of plate tectonics. Earthquakes and tsunamis

are also caused by shifting tectonic plates. To better understand the subtle

movements, scientists use GPS technology today to track the plates.

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