**Theory of Plate Tectonics**

The Lithosphere is broken down into many large pieces called tectonic plates.

These plates move slowly over Earth’s surface carrying continents and seafloor with them.

Tectonic plates move 1cm to 10 cm per year. These slow movements over millions of years changed Earth’s surface significantly.

The edges of continents are not always in the same places as the edges or boundaries of plates.

Some plates are almost entirely covered by oceans. (Pacific Plate)

Other plates consist mainly of continents. (North American Plate)

Plates move because the dense rock near their edges is pulled into the mantle by gravity.



**What Happens at Plate Boundaries?**

Most volcanoes and earthquakes occur at plate boundaries.

Mountains and deep valleys commonly form at plate boundaries.

Based on how the plates are moving they are classified into three groups:

**Divergent, Convergent, and Transform boundaries.**

Divergent-two plates move apart

Convergent-two plates are moving toward each other

Transform-two plates moving past each other horizontally.

**Divergent Boundaries**

**Convergent Boundaries**

Three main kinds of convergent boundaries.

1. Continental-oceanic convergent boundary
2. Oceanic-oceanic convergent boundary
3. Continental-continental convergent boundary.

**Transform Fault Boundaries**

|  |  |  |
| --- | --- | --- |
| **Type of Convergent Boundary** | **Structures Formed** | **Example** |
|  |  |  |
|  |  |  |
|  |  |  |

**Define terms:**

1. Fault
2. Subduction
3. Subduction zone
4. Mid-ocean ridges

|  |  |
| --- | --- |
| **Type of Plate Boundary** | **Draw what it looks like** |
|  |  |
|  |  |
|  |  |

**Give an example of each type:**

**Earthquakes and Volcanoes**

**When rocks slide past one another at a fault, the resulting vibrations are**

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.**

**Earthquakes are related to \_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.**

**As tectonic plates \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ their edges experience stress. If part of a**

**plate cannot move freely, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ from the stress on the rocks**

**\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_. At the point where the stress becomes so great the**

**rock \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ along a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, causing an \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.**

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**What Happens When Rock Breaks?**

**When rock breaks during an \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, energy is released. The**

**energy travels through the earth as \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.**

**Seismic waves travel \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ earth and along its \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.**

**Seismic waves produce the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ we experience during an earthquake.**

**The \_\_\_\_\_\_\_\_\_\_\_\_\_ of an earthquake is the point inside Earth where rock**

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Seismic waves travel in all directions from the focus. In**

**most cases, the focus is located below Earth’s surface.The point on the**

**surface directly above the focus is the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.**

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ from an earthquake is often greatest near the**

**Epicenter, but may also occur many kilometers away.**

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**Three Types of Seismic Waves**

P waves

S waves

Surface waves